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EXAMINER

CHANG, RICHARD

ART UNIT PAPER NUMBER

2663

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/937,588

Applicant(s)

LAHTI ET AL.

Examiner

Richard Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-9 is/are rejected.
- 7) ☒ Claim(s) 4 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/27/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1-10 are objected to because of the following informalities:

Claims 1-10 list reference numbers within parentheses. These listed references are unrelated to the claim subject matter by the claim language and cause unnecessary confusion in the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 5,631,896 ("Kawase et al.") in view of US patent 6,678,259 ("Schwengler").

Regarding claim 1, Kawase et al. teach a hitless path switching apparatus and method in digital communication systems (method for changing parallel signals in a digital data transmission, including over a radio link), in which transmission is parallel in both working and protection paths (in which method the

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data flow to be transmitted is divided into several transmissions) (See Fig. 12) comprising steps of

- there is selected a primary transmission path (51 See Fig. 12, Col 5, lines 48-54),

- there is Header Error Control (HEC) byte in the ATM format, (inherently there is calculated a check sum for the data flow of the length of the processed section, and said check sum is added to the processed section of the data flow in order to form a data frame to be transmitted) (See col. 10, lines 39-48),

- in the transmission paths, there is carried out the transmission of the data frame (S1, see Fig. 3),

- there is Cyclic Redundant Check (CRC) calculation using the HEC byte is for error detection in both path (correctable errors in the received data frames are corrected, and an error sum for each transmission paths is calculated) (See col. 10, lines 39-48),

- there is bit error detection taking place in both a working path and a protection bath to determine the path selection with least error (the error sum of the selected transmission path is compared with the other paths and when necessary, the transmission path selected as the one to be received is changed over to a path with a smaller error sum) (See col. 10, lines 57-64),

- the switching of clock path is waiting on the convergence of the phase adjusting and error comparison (a clock signal is changed over after waiting for a sufficiently accurately cophasal clock signals) (See Fig. 12, Col 9, lines 40-53), and

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- the information in the data flow of the processed section of the selected transmission path is conducted to the output cable (72) (See Fig. 12, Col 9, lines 40-53).

Kawase et al. teaches substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

“changing parallel signals in a digital data transmission over a radio link”.

Schwengler teaches a similar digital transmission systems with parallel paths (32, 34) using microwave linked Local Multipoint Distribution System (LMDS) (parallel signals in a digital data transmission over a radio link) (see Fig. 1, col. 6, lines 3-23).

A person of ordinary skill in the art would have been motivated to employ Schwengler in Kawase et al. in order to obtain a hitless path switching apparatus and method in digital communication in which transmission is parallel in both working and protection paths and to take advantage of transmitting both paths over a radio links in claim 1.

The suggestion/motivation to do so would have been to transmit with parallel paths (32, 34) using microwave linked LMDS as a radio link (see Fig. 1, col. 6, lines 3-23). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Schwengler with Kawase et al. to obtain the inventions specified in claim 1.

Regarding claim 2, this claim has limitation that is similar to those of claim 1 and Kawase et al. further teach that the CRC calculation using the HEC byte is

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performed, and the official notice indicates that for CRC the checksum is calculated by multiplying the data flow by a polynome suitable for modeling, thus it is rejected with the same rationale applied against claim 1 above.

Regarding claims 3 and 5, as discussed above, this claim has limitation that is similar to those of claim 1, and Schwengler further teaches an indoor unit (18) for digital data transmission and for selecting the data flow for parallel signals in digital data transmission over a radio link (32) comprising at least a changeover device (90, see Fig. 3, col. 6, lines 49-64).

A person of ordinary skill in the art would have been motivated to employ Schwengler in Kawase et al. in order to obtain an indoor unit for digital data transmission and for selecting the data flow for parallel signals in digital data transmission over a radio link and to take advantage of at least a changeover device for receiving and changing a propagation assured signal on the basis of an error sum obtained from an outdoor unit, said changeover device being arranged to change clock signals after waiting for sufficiently accurately cophasal clock signals in claims 3 and 5.

The suggestion/motivation to do so would have been to receive and change a propagation assured signal from an outdoor unit over a radio link (32) on the basis of an error sum obtained and clocks after waiting for sufficiently accurately cophasal clock signals using a changeover device (90) in the indoor unit (18) (see Fig. 3, col. 6, lines 49-64). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which

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the invention pertains to combine Schwengler with Kawase et al. to obtain the inventions specified in claims 3 and 5.

Regarding claims 6- 7, as discussed above, this claim has limitation that is similar to those of claim 1, and Schwengler further teaches an outdoor unit (60) for digital data transmission over a radio link and for selecting the data flow for parallel signals in digital data transmission wherein said outdoor unit comprises at least a transmitter for transmitting the signal to be changed and respectively a receiver for receiving said signal (see Fig. 3, col. 6, lines 24-64), and means for calculating the error sum of the received signal and further for outputting the information indicating said error sum (see Fig. 7, col. 9, lines 1-23).

A person of ordinary skill in the art would have been motivated to employ Schwengler in Kawase et al. in order to obtain an outdoor unit for digital data transmission over a radio link and for selecting the data flow for parallel signals in digital data transmission and to take advantage of a transmitter for transmitting the signal to be changed and respectively a receiver for receiving said signal and means for calculating the error sum of the received signal and further for outputting the information indicating said error sum in claims 6-7.

The suggestion/motivation to do so would have been to a transmitter for transmitting the signal to be changed and respectively a receiver for receiving said signal (see Fig. 3, col. 6, lines 24-64), and means for calculating the error sum of the received signal and further for outputting the information indicating said error sum (see Fig. 7, col. 9, lines 1-23). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which

the invention pertains to combine Schwengler with Kawase et al. to obtain the inventions specified in claims 6-7.

Regarding claim 8, as discussed above, this claim has limitation that is similar to those of claim 1, and Schwengler further teaches an arrangement for changing parallel signals in digital data transmission over a radio link comprising a first indoor unit (18) for dividing the data flow, antennas (20,22,24,26) for transmitting and receiving parallel clock signals and a second indoor unit (26) for selecting the data flow comprising

- a first changeover device (90) in the first indoor unit (18) and a second changeover device (90) in the second indoor unit (26) for receiving the propagation assured data, said changeover devices being arranged to change clock signals after waiting for sufficiently accurately cophasal clock signals, and
- a first (20) and second (24) outdoor unit provided with means for processing by an algorithm that models the data to be transmitted and respectively checks the data to be received and corrects errors (see Fig. 1, col. 6, lines 11 – col. 7, line 5).

A person of ordinary skill in the art would have been motivated to employ Schwengler in Kawase et al. in order to obtain an arrangement for changing parallel signals in digital data transmission over a radio link comprising a first indoor unit for dividing the data flow, antennas for transmitting and receiving parallel clock signals and a second indoor unit for selecting the data flow and to take advantage of a first changeover device in the first indoor unit and a second changeover device in the second indoor unit for receiving the propagation

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assured data, said changeover devices being arranged to change clock signals after waiting for sufficiently accurately cophasal clock signals and a first and second outdoor unit provided with means for processing by an algorithm that models the data to be transmitted and respectively checks the data to be received and corrects errors in claim 8.

The suggestion/motivation to do so would have been to have a first changeover device (90) in the first indoor unit (18) and a second changeover device (90) in the second indoor unit (26) for receiving the propagation assured data, said changeover devices being arranged to change clock signals after waiting for sufficiently accurately cophasal clock signals, and - a first (20) and second (24) outdoor unit provided with means for processing by an algorithm that models the data to be transmitted and respectively checks the data to be received and corrects errors (see Fig. 1, col. 6, lines 11 – col. 7, line 5). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Schwengler with Kawase et al. to obtain the inventions specified in claim 8.

Regarding claim 9, this claim has limitation that is similar to those of claim 2 and claim 8, thus it is rejected with the same rationale applied against claim 2 and claim 8 above.

Allowable Subject Matter

4. Claims 4 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all

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of the limitations of the base claim and any intervening claims and if no art rejection can be applied.

Examiner's Statement of Reasons for Allowance

5. The following is an examiner's statement of reasons for allowance:

The prior art along or in combination fails to teach or make obvious the following limitations:

“data frame decoding blocks whereto both the clock signals and the data signals are conducted, and where said signals are formed into control signals and data signals decoded from the frames”,

“elastic buffer and control blocks whereto the control signals and data signals decoded from the frames are conducted, and whereto the selected clock signal to be received is conducted in order to synchronize the data”,
and

“a decoding block whereto a data signal is conducted from the data signal multiplexer, and whereby the data signal multiplexer is controlled” as recited in the dependent claims 4 and 10.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is

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(571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RKC
rkc

Richard Chang
Patent Examiner
Art Unit 2663

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PRIMARY EXAMINER

4/18/05